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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,998	12/31/2001	Koichi Asai	111609	7004

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EXAMINER

DIAMOND, ALAN D

ART UNIT	PAPER NUMBER
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1753

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DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/029,998

Applicant(s)

ASAI ET AL.

Examiner

Alan Diamond

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6, 7, 9-16 and 24-27 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 8 and 17-23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claims 4, 5, 17-19, 22, and 24 are objected to because of the following informalities: In claim 4, at line 4, the term "temporarily holding" should be changed to "temporarily-holding". In claim 5, at line 4, the term "temporarily- holding" should be changed to "temporarily-holding". In claim 17 at line 4, in claim 18 at line 4, in claim 19 at line 4, in claim 22 at line 6, and in 24 at line 3, the term "temporarily holding" should be changed to "temporarily-holding". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7, 15, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 7, at line 3, the term "predetermined" is indefinite because it is subjective. It is suggested that said term be deleted.

In claim 15, at line 5, the term "predetermined" is indefinite because it is subjective. It is suggested that said term be deleted.

In claim 24, at lines 3-4, the term "the light-transmitting layer cured" should be changed to "the cured light-transmitting layer".

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2 and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Te Velde, U.S. Patent 3,847,758.

Te Velde prepares an electrode system that is used for solar cells by producing a binder layer (21) made from polyurethane, wherein said binder layer (21) holds a plurality of grains (11) (see Figures 1-5; col. 1, lines 29-31; and col. 3, line 45 through col. 4, line 45). Polyurethane is transparent, and said binder layer (21) reads on the instant light-transmitting, photovoltaic-element holding member. Light would enter the solar cell from the binder layer side in Figure 5, i.e., from the top in Figure 5. The grains (11), which have a core of one conductivity type (i.e., p-type or n-type) and a shell of the opposite conductivity type, read on the instant photovoltaic elements (see col. 3, lines 45-56; and the paragraph bridging cols. 5 and 6). Note in Te Velde's Figure 5 that first electrode layer (41) and second electrode layer (53) are on one of the opposite sides of the binder layer (21) (see also col. 3, line 57 through col. 4, line 23). Note also in Figure 5 that more than 50% of the volume of each grain is in the binder layer (21). Since Te Velde teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

6. Claims 1-3, 6, 9-16, 25, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Matlow et al, U.S. Patent 3,040,416.

Matlow et al prepares a solar cell by producing a transparent plastic layer (43) which reads on the instant light-transmitting, photovoltaic-element holding member and which holds a plurality of solar cells (18) each having a p-type layer and an n-type layer (see Figure 2; and col. 1, line 54 through col. 2, line 34). As clearly seen in Figure 2, both electrodes are on one of opposite sides of the transparent plastic layer (43). The solar cells (18) are embedded in the transparent plastic layer (43) by calendaring liquid plastic layer (43) onto plastic sheet (42), then partially embedding the solar cells in the liquid plastic layer (43) and then hardening (i.e., curing) the plastic layer (43) (see the paragraph bridging cols. 1 and 2). As seen in Figure 2, more than 50% of the volume of each solar cell is embedded in the plastic layer (43). It is the Examiner's position that the limitations of instant claim 15 are inherently met by Matlow et al's embedding step. Since Matlow et al teaches the limitations of the instant claims, the reference is deemed to be anticipatory.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 12-16, 25, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paradise, U.S. Patent 2,904,613, in view of Ralph, U.S. Patent 3,025,335.

Paradise teaches a method of making a solar energy converter wherein silicon semiconductor particles (13) are embedded in a binder (12) of polyethylene by painting or spraying the uncured binder onto reinforcing plate (10), then embedding the particles into the binder, and then curing the binder (see col. 3, lines 5-31; and Figures 1-5). As seen in Figure 2, with the embedding step, more than 50% of the volume of the semiconductor particles are embedded in the binder (12). It is the Examiner's position that the limitations of instant claim 15 are inherently met by Paradise's embedding step. As seen in Figure 5, the solar energy converter has two electrodes on opposite sides of the binder (12). Paradise teaches the limitations of the instant claims other than the difference which is discussed below.

Paradise does not specifically teach that its polyethylene is transparent. Ralph is relied upon for showing that polyethylene that is used in solar energy converters can be transparent (see col. 1, lines 66-72). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used transparent polyethylene for Paradise's polyethylene binder (12) because polyethylene that is used in solar energy converters can be transparent, as shown by Ralph.

Allowable Subject Matter

9. Claims 8, 20, 21, and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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10. Claims 4, 5, 17-19, and 22 would be allowable if rewritten to overcome the objection for informalities set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,399,412 is hereby made of record.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Diamond whose telephone number is 703-308-0840. The examiner can normally be reached on Monday through Friday, 6:15 a.m. to 2:45 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 703-308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Alan Diamond
Primary Examiner
Art Unit 1753

Alan Diamond
April 4, 2003